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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/113,216 07/10/98 AGAPIOU

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IM52/0411

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LAW DEPT

EXAMINER

DI VERDIL M

ART UNIT

PAPER NUMBER

1755

DATE MAILED:

04/11/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

# Office Action Summary

Application No.  
09/113,216

Applicant(s)  
Agaplos Kyriacos et al.

Examiner  
Michael J. DiVerdi

Group Art Unit  
1755



☒ Responsive to communication(s) filed on Jan 31, 2001

☐ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 35 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

## Disposition of Claim

☒ Claim(s) 1, 4-10, 13-20, and 23-120 is/are pending in the applicat

Of the above, claim(s) 40-120 is/are withdrawn from consideration

☐ Claim(s) \_\_\_\_\_ is/are allowed.

☒ Claim(s) 1, 4-10, 13-20, and 23-39 is/are rejected.

☐ Claim(s) \_\_\_\_\_ is/are objected to.

☐ Claims \_\_\_\_\_ are subject to restriction or election requirement.

## Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on \_\_\_\_\_ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some\* ☒ None of the CERTIFIED copies of the priority documents have been  
☐ received.

☐ received in Application No. (Series Code/Serial Number) \_\_\_\_\_.

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\*Certified copies not received: \_\_\_\_\_

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

## Attachment(s)

☒ Notice of References Cited, PTO-892

☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). \_\_\_\_\_

☐ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

— SEE OFFICE ACTION ON THE FOLLOWING PAGES —

Art Unit: 1755

***Continued Prosecution Application***

1. The request filed on March 16, 2001, for a Continued Prosecution Application (CPA) under 37 CFR 1.53(d) based on parent Application No. 09/113,216 is acceptable and a CPA has been established. An action on the CPA follows.

***Response to Amendment***

2. The following is a response to the applicants' remarks in Paper No. 10, dated January 31, 2001. Claims 1, 4-10, 13-20, and 23-39 are currently being considered.

***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1, 4-10, 13-20, and 23-39 remain rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention for the same reasons put forth in the previous office action.

Art Unit: 1755

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371© of this title before the invention thereof by the applicant for patent.

6. Claims 1, 9, 10, 20, and 25 are rejected under 35 U.S.C. 102(e) as being clearly anticipated by Masi *et al.* (U.S. Patent No. 6,184,316).

Masi *et al.* disclose a catalyst for olefin polymerization comprised of Cp\*TiCl<sub>3</sub> and methylalumoxane (MAO) treated with acetic acid to form an Al-acetate bond. See column 14, Example 14, lines 25-47. The Cp\*TiCl<sub>3</sub> was prepared in a previous example, see column 11, Example 1, lines 14-33. The Cp\*TiCl<sub>3</sub> and MAO-acetate are combined for 10 minutes prior to the polymerization of styrene. See column 14, lines 44-47. This value is within the range of claim 25.

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 1755

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103© and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

The 103(a) rejection of claims 1, 4, 8-10, 13-17, 19, 20, 23-28, 30, 31, and 33-38 over Suga *et al.* (EP 0 683 180) presented in the previous office action has been withdrawn.

The 103(a) rejection of claims 5-7, 18, 29, 32, and 39 over Suga *et al.* (EP 0 683 180) in view of Hara *et al.* (EP 0 376 145) presented in the previous office action has been withdrawn.

8. Claims 4-8, 13-19, 23, 24, and 26-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Masi *et al.* (U.S. Patent No. 6,184,316).

Masi *et al.* are being relied upon for the same reasons as applied to claims 1, 9, 10, 20, and 25 above. Masi *et al.* fail to disclose an example where the metal carboxylate takes the form of  $\text{MQ}_x(\text{OOCR})_y$ , it should be pointed out that MAO is an oligomer of  $[-\text{O}-\text{Al}(\text{R})-]_n$  bonds. Masi *et al.* teach that another form that their metal-carboxylate can take is a metal complex of formula  $\text{R}-\text{COO}-\text{G}$  where R is an alkyl group of 1-30 carbons (stearate compounds contain 17 carbon atoms) and the metal is from Group 13 of the periodic table (i.e. aluminum). See column 3, lines 24-31, and column 7, lines 21-24. Masi *et al.* fail to disclose an example where the catalyst

Art Unit: 1755

comprises a carrier. Masi *et al.* teach that an inorganic support such as silica is within the scope of their invention. See column 6, lines 1-7. Masi *et al.* fail to disclose an example where an activator was included with the  $\text{Cp}^*\text{TiCl}_3$  and MAO-acetate. Masi *et al.* teach that additional compounds may be added such as tetraalkyl tin compounds to give increased activity without loss of stereoselectivity. See column 7, lines 60-67 and continued into column 8, lines 1-9. Masi *et al.* fail to disclose an example where the weight percent of the metal carboxylate to total weight of the polymerization catalyst is between 1 and 20, or 0.5 to 25 as required in claims 16, 19, 26, 27, 31, and 34. However, the Masi *et al.* reference discloses the claimed invention except for these metal carboxylate to polymerization catalyst weight ratio ranges. It would have been obvious to one having ordinary skill in the art at the time the invention was made to determine the optimal range, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105, USPQ 233. Masi *et al.* fail to disclose an example where the metallocene is a bis cyclopentadienyl or cyclopentadienyl derivative, bridged or unbridged compound. Masi *et al.* teach that bis cyclopentadienyl metallocenes can be used. See column 4, lines 13-41. Masi *et al.* fail to disclose an example where the metallocene and metal carboxylate are premixed from 30 minutes to 8 hours. Masi *et al.* teach that these two components should be premixed between 1 minute to 1 hour. See column 7, lines 40-44. This range overlaps the current claim 38 range. Overlapping ranges have been held to establish *prima facie* obviousness. MPEP 2144.05. It would have been obvious to one ordinarily skilled in the art of metallocene

Art Unit: 1755

catalysts to prepare the catalyst system disclosed by Masi *et al.* but substitute the conditions described above. The motivation would have been that such changes are fairly taught by Masi *et al.*

### ***Response to Arguments***

9. Applicant's arguments filed January 31, 2001 have been fully considered but they are not persuasive. Applicants argue against the 112 second paragraph rejection of claims 1, 4-10, 13-20, and 23-39 for being indefinite because of the term "metallocene-type" by stating that the term is an art recognized term. This is not found persuasive because the adjunct "type" is not clearly defined to provide proper limitations to the scope of the claims. The term "metallocene" by itself is recognized in the art to include metal complexes of a cyclopentadienyl ring or derivatives thereof including indenyl and fluorenyl, and is therefore by itself a proper description.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael J. DiVerdi whose telephone number is (703) 305-0213. The examiner can normally be reached on Monday-Thursday from 6:30 AM to 4:00 PM. The examiner can also be reached on alternate Fridays.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Bell, can be reached on (703) 308-3823. The fax phone numbers for the

Art Unit: 1755

organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

  
Mark L. Bell  
Supervisory Patent Examiner  
Technology Center 1700

  
Michael J. DiVerdi

April 4, 2001